

April - 1985

TWIN CITIES ATARI INTEREST GROUP

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Twin Cities Atari Interest Group
684 Queen Avenue South
Richfield, MN 55423

Next TAIG meeting
Sunday, April 29
SWAP meet 6:00 p.m.
TAIG 7:00 p.m.

St. Louis Park Rec. Center
5005 West 36th Street
St. Louis Park, Mn.

TAIG elections will be
held in MAY.

Next NAIG meeting
Wednesday, May 15
at User Friendly Computers,
Spring Lake Park, Mn.

Children will play
By Phil Seifert

A thousand curses be on the one who has conjured me into this deep, dark hole of a dungeon. Will I never see the end of the gloom of despair? Someday, something entirely new must happen down here in the pits! Aha!! Do I see a light over there? I'll just meander over there being careful to avoid those stupid miners that miss all those jumps above. Who the hell is dropping is dropping acid rain on me from up there?

I see a table, or is it a pedestal? What is that strange machine being displayed on top of it? It's silver-gray in color and has a slanting look to it. Oh my god! It is an Atari 130 XE! Will wonders never cease? Where is the box that it came in? Spying a red glint in the corner, I found it. Hmm, this is interesting. They're talking all about the new machines, monitors, and programs. Why do they mention 1050 disk drives when there is not a 1050 on the box? Ah well, nobody ever said they were perfect.

Opening the box gingerly was no great chore. What was difficult was stopping myself from ripping that box apart! Inside the box I found a REAL MANUAL!! At last, somebody at Atari realized the end users of their machines must have some info worthy of their purchasing power. This manual is more than enough to get the novice adventurer....er.... computerist started. It explains how to start the computer, disabling Basic, and will wonders never cease!? They even tell people to join user's groups!! Of course, there's a section on Basic programming, not just a reference manual, but actual programming examples and tutorials. They even gave out the pin outs of all their connectors on the back of the computer!!!

Having satisfied my curiosity about the book, I turned towards the mythical machine, the Atari 130 XE. First thing I did was turn on the computer. The switch is located on the back just like the old XL's. I then typed out the magical incantation of memory, ?FRE(0).

Nope, I did not get the blessings of 128k RAM in there, what is going on? Quickly, I turned towards the red book and found a section on using extra RAM contained within. They even told me how to access the extra RAM! You can do it by poking certain bit combinations into PIA Port B, just like bank switched on the XL. (You did bank switch on the XL's didn't you?) Ah, that means there are no programs out there that will use the maximum capacity of this computer. Wait! What's that whistling in the wind? It is a little bird telling me that there will be software to utilize the extra RAM. Syncalc, Synfile+, and even AtariWriter will be modified to handle it. Oh, I am also hearing that there is a powerful new spell coming out called DOS 2.5. Supposedly this is even more powerful than DOS 2.0. It'll handle most of the information you can store in the 1050's dual density mode. And I heard they're going to be supplying RAM disk software to use the extra memory. Sounds good to me! I threw a few crumbs of bread to the bird from my ever dwindling supply of food that I found at the opening of this dungeon. Turning my attention once more to the computer on the pedestal, I pondered whether it is as compatible as they claimed. Well, not trusting them, I typed BYE and found myself in the self test program. Hmm, looks like the exact same operating system was conjured within and there will be no compatibility problems with the XL's. The manual even informs you to send for the ancient translator scroll. How nice of them to inform us of this. Of course, I was not done testing the compatibility, and I pulled out my ultimate weapon, my BOUNTY BOB STRIKES BACK cartridge! Turning off the power and then mumbling holy words to guarantee my success at the game, I plugged in the program and then turned on the screen. Wow!! It works!! Too bad my holy words didn't.

This was just too good to be true. I found myself searching for more of these computers and discovered they were very short in supply. In fact, I was lucky to even have seen this one as they are not

shipping these in great quantities. It has been rumored in the winds, that these will sell for \$149.95 in all your better computer establishments. If I can ever find my way out of these little twisty passages that all look alike, I will be purchasing one of those too.

Other things I noticed about the machine is the keyboard seemed to have a nicer feel to it than an XL but not as good as my trusty old 800. They keys also have a shorter stroke to them, but, I am growing arcane to such changes. On the back I found a monitor jack, a cartridge slot, a power jack, an RF output jack and expansion slot. An expansion slot? What is this? It's not the same one that was on my beloved XL! I wonder what wonderful things they will be plugging into this thing? A hard disk? Local Area Networks? Who knows?

Oops, there goes another miner leaping blindly off the ledge above (I guess he has had it). Oh wow! He made that jump! I am going to have to find out how he does that! Be seeing you all later!!

Notes from the Editors

Well, the big news about Atari is the new machines. The newsletter this month will focus on the XE and ST series computer.

Other news, the TA16/SPACE BBS is back up, there has been a terrific amount of Atari BBS's not run by user groups springing up around the area. The numbers of some of them are in a separate article.

We are taking suggestions for new articles, and pieces of software that you want to see reviewed, this month the reviews center around the hardware, if you like it, inform us if not, inform us. Well anyways, on with the newsletter.

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GEM SEMINAR REPORT
by NAT FRIEDLAND, ANTIC EDITOR

Antic was the ONLY Atari Magazine present at the GEM Software Developers Seminar held in Monterey by Digital Research, Inc. last month. Probably of greatest interest to Antic readers would be what we learned in conversation with the five Atari technical executives who were on hand...

First of all, Atari still considers itself to be on schedule for bringing the first production ST computers onto the market in April. Full ST production capacity won't be reached until June. The 10-15 megabyte hard disk for the ST will show up in the summer. This is essentially the same schedule Antic reported at the January Consumer Electronics show. What's significant NOW is that none of the normal debugging problems associated with new machines are expected by Atari to hold up the ST significantly.

Remember the legend-shrouded 32-bit Atari we reported that Jack Tramiel talked about at his November press conference? Well, it hasn't drifted off to Computer Wish Heaven. Every time an Atari engineer talked about the 32-bit computer in Monterey, a delighted smile appeared on his face. The computer was described to Antic as a "VAX minicomputer on a chip" and a "40,000 CAD/CAM computer graphics workstation that will sell for under \$2,000. And Atari still hopes to meet Jack's stated goal of unveiling this machine at the April electronics fair in Hanover, Germany.

Antic has signed up to purchase one of the first pre-production prototypes of the ST. It's supposed to be available at the beginning of March. These prototypes are being hand-wired and Atari says they'll be sold at whatever is the final break-even price. The next batch of advance ST units will be "editors' review packages" that are supposed

to ship at the end of March or the beginning of April. After that, the availability of STs depends on whether or not a store near you signs to get one of the first allocations.

As for the GEM Seminar itself, the \$800 Feb. 14-15 workshop was highly technical and directed at professional consumer-software programmers who were thoroughly experienced with the C language or with Macintosh window program development. Interestingly, within this sophisticated and hard-nosed environment, the name Atari was mentioned often and each time it was treated with respect as a credible factor in the software marketplace. This certainly would not have been the case less than a year ago. At a well-attended evening reception there was available for hands-on examination a working ST with a preliminary version of Atari GEM burned into ROM as an EPROM. Before you could handle the ST, you had to sign a confidentiality pledge which also gave you a very sketchy early draft of the official Atari software development documentation, and official status on the list of certified Atari software developers. There was a long line waiting to sign and most of the Seminar's 200 attendees did commit to develop ST software.

The Seminar sessions were taken up with highly detailed discussions of GEM development nuts and bolts such as the strict interfacing procedures which are supposed to make porting GEM-based programs between different computers a routinely mechanical one-day process. Of course, the main selling point of GEM is that it's supposed to make it simple to convert software between the IBM PC and its clones, the Macintosh, the Atari ST and any other computer the GEM licenses a version for. Access to GEM windows, debugging, and correct embedding of transfer hooks were among the other technical topics discussed. All attendees were given the two-volume GEM Toolkit documentation. DRI's recommended professional development language was Lattice C, which costs around \$500. For those who don't

realize this, it should be noted that the Seminar was specifically dealing with the just-completed IBM PC version of GEM. Six-disk beta test editions of GEM were being sold to developers by DRI for \$500. The GEM Library software of prepared graphics routines cost extra. Nobody was claiming that the Atari version of GEM was ready for beta testing at the time of the Seminar.

Russ Wetmore, author of HOMEPAK and PREPPIE as well as other major Atari programs, flew in from his Florida homebase to attend the seminar and then stayed on to see the MacWorld Show in San Francisco. He spent time at Antic during this period and shared with us the viewpoints of a highly experienced Atari professional programmer. "I think the developers at the Seminar fell into two groups. One group is totally sold on the GEM goal of making a lot of different computers compatible with each other," said Wetmore. "And they are willing to overlook some nagging questions that came up during the sessions."

Wetmore considers himself part of the second group, which is taking more of a wait-and-see attitude. "GEM does not seem to have all the built-in features of the Macintosh interface," he said. "This is going to put a lot more demands on a commercial programmer. For example, I don't see that GEM has any built-in text editor."

He also expressed doubt that porting GEM programs between different computer models will be as cut-and-dried as DRI claims. "The conversion routines have a LOT of machine language and it just does not look that straightforward to me," he said. And Wetmore wasn't too happy about the licensing fees for developers that DRI announced at the end of the Seminar. "The basic agreement is \$1,000 for the first 10,000 copies of your program and then it's renegotiable. There's nothing to prevent DRI from cutting itself in as your partner if you come up with a smash hit program," he said.

Still, Wetmore was positive enough about GEM that he bought the Seminar disks and intends to invest over \$5,000 for an enhanced IBM PC

and Lattice C. "But right now any GEM programs I publish will just be for the Atari," he said, "because it's the only computer that a developer won't have to pay royalties to DRI."

PRODUCTION 520BT & 130XE SHOWN
APRIL INSTORE DELIVERY PLEDGED
by MICHAEL CIRAOLO Antic Associate
Editor

SAN LEANDRO, Calif.--A panel of eight to Atari executives headed by AtariSoft president Sig Hartmann demonstrated production units of the new XE and ST computers at the San Leandro Computer Club on March 5 and pledged that the powerful new machines will be on retail shelves in April.

According to research and development vice president Shiraz Shivji, the new 16-bit ST computers will be shipped with Logo, but users will have to buy BASIC separately. However, other Atari spokesmen later told Antic privately that the decision not to include BASIC may still be changed. Atari has also postponed plans to produce an 8-bit portable computer, due to lack of interest. Instead there will be a 16-bit portable ST. Also, plans for an XEM 8-bit music computer have been postponed indefinitely due to problems with finalizing the AMY sound chip. Shivji and John Feagans, who is responsible for the 16-bit computer's operating system, held the audience spellbound as they demonstrated the incredibly fast color window/icon/mouse abilities of the ST -- dubbed the "Jackintosh" for its resemblance to Apple's Macintosh. Feagans and Shivji also wowed the computer club by displaying the entire palette of 512 colors simultaneously on the ST.

"It's taken seven or eight months to develop, but it's real! The plastic is real! We're doing everything we can to get you the STs," Hartmann said.

"We believe it's faster than the IBM AT," Shivji said. "I think this'll be one of the sweetest machines for hackers."

Shivji said the chips in the new computers are soldered, not socketed. He encouraged expansion of the STs through the Direct Memory

Access port, which he said transfers data at 10 megabits per second. He also said the largest ROM cartridge the STs can accept is 128K. Hartmann presented much of the standard New Atari rhetoric. "We want a lot closer ties to user groups. We're interested in better communications, helping fix problems and hearing criticism," he told the audience of 200.

In an unprecedented display of corporate openness, Hartmann was joined by the software product manager for the XEs, the product manager for the STs, the head of ST OS/GEM development, Atari's general counsel, and the vice presidents of finance and research and development, and the editor of the Atari Explorer. The entire group answered questions for over two hours. Atari is currently selling a professional development package for the 16-bit computers, said Hartmann. For \$4,500, a developer will receive an ST computer, an RGB color monitor and a high resolution monochrome monitor, two 3.5-inch disk drives and C tools, including a compiler, linker, loader, assembler, debugger, editor, uploader/downloader and full technical specifications.

Atari is also seeking qualified people to write and test software for the new 8-bit XE machines, according to Hartmann.

"The 8-bit line is still alive and well. All new software will run on the 800XL and 65XE, but will automatically look for and use the extra 64K RAM in the 130XE," said John Skrch, software product manager for the 8-bit line.

"Private software developers are already writing for the XEs. Hayden Software is converting Sargon III, the chess program," Skrch said.

Richard Fricke said he expects to have 25 to 30 software packages on sale when the STs are released in April. Fricke, Hartmann's second-in-command, also promised that the XEs are more solid than the 800XL. "If you lift your 800XL one foot above a table and drop it -- gently -- you'd probably lose an AtariWriter file. That won't happen with the XEs."

Although Atari chairman Jack

Tramiel previously said he would sell no software for over \$49, Hartmann now said that no software would cost more than \$100, but most Atari software would still retail below \$50. Those packages will include home productivity, business, education and entertainment software, in order of importance to the new Atari Corp, Fricke said.

At the April computer fair in Hanover, Germany, Jack Tramiel will announce a true 32-bit microcomputer, and will also demonstrate the Local Area Network capability of the 8-bit and 16-bit Ataris, according to Hartmann. Using the Infinity integrated software package from Matrix Systems, the XEs and STs will support up to 255 Atari terminals linked in a LAN through joystick ports, said Fricke. The 16-bit ST computers are based on a Motorola 68000 chip running at 8 MHz. These machines will include a keyboard processor chip, which also controls two joysticks or the two-key mouse that is included with the computer.

In addition to joystick and mouse ports, the STs have a cartridge slot, a hard disk port, a floppy disk port, RS-232 and Centronics interfaces, two monitor connections, an RF port for hooking up TV sets, and MIDI (Musical Instrument Digital Interface) in/out ports, said the Atari panel.

The 16-bit 520ST has 512K memory and will cost \$599. The for \$399. A 500K microfloppy disk drive will also be available for under \$200, said Hartmann. As previously announced, the 16-bit ST computers will function in any one of three resolution modes. Using a 320 x 200 dot resolution, each dot may be one of 16 colors. In the 640 x 200 resolution, four colors per dot are possible. A monochrome mode offers 640 x 400 dot resolution.

Sig Hartmann and other top Atari executives will meet with officers of users groups from all over the country at 4 p.m. on March 30 in Antic's offices as part of the magazine's third anniversary celebration. More details will be available on CompuServe soon.

Notes from the SYSOP

As many of have noticed, the board was down the week of April 14 and you may not have had your password validated in a timely manner. Well as these things happen I am now working at the other end of town and can no longer get to Wizard's Work as often as I would like. Which brings me to this months request:

Wanted One or Two SYSOP persons to help out with the running of our board.

Requirements: Should be able to get to Wizard Work (County Rd 18 & 36th Ave N.) at least twice a week between the hours of 11 AM - 6 PM, and spend about 1 hours time there.

Benefits: Save download time. Copy the files while there. An occasional pat on the back from some thankful user's (more abuse from those that think that free boards should deliver as much as CompuServe does)

Duties: Test Uploaded files so we don't get overloaded with programs which don't work. Validate new users. Respond to questions when possible.

Pay: Twice what I get.

If all this interests you give me a call (Dick Johnson 521-0245) or leave a message on the board.

Well enough of the plugs, on to this months news and tips. After having found out the correct switch settings for the Hayes modem with FOREM (2,4,8 down) things have been running more smoothly. I have also modified the board so that you are no longer kicked off while reading messages or up-downloading. The test for time out is only done when the Select prompt is seen.

I have noticed that some of you are confused on how to use the different boards. On our old system we had only one board which had a maximum of about 60 messages and a tendency to lose all of them when it felt like it. Now we have 5 Boards each with a capacity of about 45 messages (225 capacity) which automatically deletes the 5 oldest messages when full (no more waiting on the SYSOP).

To change from the default

board (DOWNLOAD INFO) respond to the Select prompt with "2" which will then list the boards by number or enter "2 #" to change to the desired board. For example "2 5" will take you to the FOR SALE-WANTED board.

You may then list the messages or titles with commands like R 5-12 or R 12-5 to read the messages backwards. R 5 12 will read only messages 5 and 12 (helpful for reading messages directed to you.

Entering Messages: You may enter messages by using the E option or the [R]eply while reading messages. Forem has a much more complex editor than AMIS. All Editor commands start with a "/" such as /S for Save and /A for Abort. Each line to be entered is prompted with #) ie. 1). Movement within the message is done with the following commands:

/T go to line 1
/B go to last line
/G# go to requested line number
/N# go down # lines
/U# go up # lines
/L# list the next # lines
/L list all lines in the

message.

List lines are shown with a ":" ie. 2:

/I/xxxx this command allows you to add a new line above the current pushing down the rest of the lines you have entered. Nice for that little bit of information you forgot. ie. /I/This line will be inserted above the current line.

/C/xxx/yyy this command will do a scan replace on the current line. Nice for correcting spelling. ie. /C/ncie/nice.

I hope this helps you out and encourages you to enter messages. Keep that BBS phone ringing.

Ed: Good job Dick! But I thought TAIG was a non-profit organization. How much do you get paid? (chuckle, chuckle...let a tired editor have his fun!)

RESCUE ON FRACTALUS

This is the shoot-em-up space game that was developed by Lucas Films, and was sold along with Ballblazer, it's sister program, to Epyx 'cause of software piracy of Behind Jaggi Lines, and Ballblaster, the 2 pre-released forms of the same games. I think some of our club members may know something of this.

This game is similar in theme to Choplifter, you cruise around and try to pick up the good guys, while blowing the bad guys to kingdom come.

The 3-D scrolling graphics set this apart from other software, and put it in a league with F-15 Strike Eagle (reviewed in last newsletter) and Stealth.

Let the game begin. You are sitting in the cockpit, looking out through the windshield. Notice the gauges pretty, huh? They've all got a use, so study them while we are in planet fall. As the atmosphere thins, you see the landscape that you will have to search for the downed pilots in. Now the radar comes to life. A ship 7 units east. You turn the ship east, the distance grows shorter, suddenly, a cross hair appears on your screen, and a shot hits you. You see a gun on the hill, you fire at it and it is no more. Finally, 2 units, land the ship, turn off the atomic power and wait for the pilot to run into the airlock. To save time, you open the airlock early. You wait. The pilot is running towards your ship, you look at his faceplate, hmmm, it is green..... Suddenly a thought crosses your mind. Aliens are green and lo-behold, you've a destructive little alien in economy class. So, what next. Fire the boosters and get back to the mother ship before he ends the game for you. As you leave the atmosphere, the poor guy dies. You land on the mother ship, and leave the mess for the sanitation crew. If you picked up all the pilots, you will advance. If not, you'll go back on the same level.

Rescue on Fractalus is basically

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HANDS-ON WITH ANTIC'S
DEVELOPMENT 520ST
by JACK POWELL ANTIC TECHNICAL
EDITOR

Our Atari 520ST just arrived in the Antic offices. This is the \$5,500 development package, and it includes the computer, two 3 1/2" disk drives, one medium-resolution (640 X 200) RGB analog monitor, and one mouse.

The software in the package is the "C" compiler, machine language assembler and debugger by Digital Research, the Mince screen editor by Mark of the Unicorn, Kermit -- a modem protocol program for file transfer, CP/M-68, and, of course, GEM -- which is in ROM in the machine.

On back order -- but expected soon -- is a high-resolution (640 X 400) monochrome monitor and a ten-megabyte hard disk. Along with all this came 1000 pages of documentation and since it will take some time to digest all of this, we thought you might like a first impression of this new, high-level Atari computer. The development 520ST is a preliminary model and there will be some changes between now and the time you see it in the stores, but all parts of this machine were factory made in the same manufacturing plants as the final product will be. The only real difference -- besides the price -- is that these machines were hand assembled.

The first thing you notice when taking the ST out of its box, is that it's very light. Although somewhat larger in size than the 800XL, it feels lighter. This may be because the shielding has not yet been added. It looks exactly like the ST on our May cover, but there are some details you can't see from the photograph. On the right edge of the machine, to the rear, are two joystick ports identical in appearance to current Atari joystick ports, except they are also used for the mouse.

On the left edge, rear -- opposite the joystick ports, is the cartridge slot. This will accept a 40-pin board -- 20 upper and 20

lower. In back of the computer are various switches and ports, each labelled beneath and with an indicating icon etched in the plastic above. From left to right they are:

- Reset - a small, square button.
- Power - identical to previous Atari power switches.
- Power In - 7-pin, male DIN.
- MIDI Out - 5-pin, female DIN.
- MIDI In - same as above.
- Television - RCA, female.
- Channel - mini-switch, labelled "L" "H".
- Monitor - 13-pin, female DIN.
- Printer - female D-25, IBM-PC/Centronics compatible.
- Modem - male D-25, IBM compatible.
- Floppy Disk - 14-pin, female DIN.
- Hard Disk - female D-19.

Besides the standard keyboard and ten-key pad, are ten function keys, labelled F1 to F10. The isolated cursor section is particularly well designed with the lower three keys representing Left, Down and Right, and the Up arrow centered above them. On either side of the Up key are Insert and Clr/Home. The top two keys in the cluster -- which are enlarged -- are Help and Undo. The Undo key may become particularly useful.

The drives accept Sony 3 1/2" disks. To boot the machine, first turn on the drives and insert both disks before turning on the computer. A disk must be in a drive for the computer to later access that drive. When booted, the GEM desktop appears as a light green background with pale blue border and black-outlined icons. In the upper right corner of the screen are two disk icons, one over the other, that look like file cabinet drawers. In the lower right corner of the screen is a trash can.

In the border area, above the upper left section of the green background, are the words, "DESK FILE VIEW OPTIONS." In the middle of the screen is a thin, black arrow-cursor which is moved by the mouse.

We'll save details on GEM for later articles. Suffice it to say, it is fast! It can redraw an entire

screen of icons in the blink of an eye.

This is just a surface description of an exciting new machine. Antic wants to get the information out to you as soon as possible and we plan to share our ST experiences as they happen. Stay tuned for further details.

Atari BBS's

This is a list of local boards that are either Atari based, or include a totally Atari board(s).

The long distance BBS's are total Atari systems.

Confirmation from the sysop, or a co-sysop is required before ANY BBS is listed. This should keep us from printing the numbers of non-systems (wrong numbers), systems that are down, or systems that the sysop wants to remain private.

If you are a sysop, run an Atari, or related board, and wish your ph. to be printed, Call Dave or I, or leave a message on TA16.

Local #'s

TA16/SPACE	544-9058
Deep Thot	938-7535
The Barn	521-5398
1985 (MCMLXXXV)	729-1985

Long Distance #'s

Zandor, Tucson AZ	602-326-1186
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There is always room for another Atari BBS to be added to our list.

a souped up Star Raiders, and, like Star Raiders is an absolute must for any alien zapping fan. By the way, I understood Fractalus, Star Raiders on the other hand.....

ATARI PASCAL 1.0 MACHINE CODE SUBROUTINES By MJN

In my last article I showed you the fixes that were needed to make the ATARI Pascal 1.0 work. Also, in past articles I hinted at being able to use machine language (which will be noted as M/L from now on) subroutines within the pascal code. In this article I will show you how to use this feature.

Machine language subroutines in ATARI Pascal are stored within the pascal code by use of the 'INLINE' feature see page 60 (section 3.6) of the Pascal manual for syntax and additional information on 'INLINE'. To insert the code just follow the "INLINE(" with your code (in decimal or \$hex) with each byte separated by a slash "/", and remember to always end your subroutines with a RTS (\$60). Now the subroutine exists within the pascal code, but at this point it will not be executed. This is because the 'inline' code is preceded by five bytes of 'p-code' which tell the interpreter to skip over the data, so we must wipe out this 'p-code'. To do this we use the 'FILLCHAR' procedure (page 43 of the Pascal manual) to change the five bytes to "\$EA" or NOOP's which will cause the program to flow into our M/L subroutine.

The example that I will present is also the "fix" for the SWAP procedure which does not work in the Pascal as shipped. I will assume that this (or any other M/L routine) will reside within a greater program, so references to that effect should not confuse you.

Because the 'SWAP' procedure does not work as it now is we will call this new procedure 'SWAP' so that any references will go to our procedure not the built in one. Somewhere in the beginning of your program, with the procedure/function definitions you will need to include the 'FILLCHAR' procedure call from the include files, and it will look like this.

```

predefined
PROCEDURE
FILLCHAR(dest:anytype;len:integer;ch
:char);

```

The variable names (dest,len & ch) are only used for this example you may use different names in your program, but maintain the locations of the type declarations. Now I will define the (SWAP) function itself, while this will be a function the inline feature may also be used in a procedure. This function (or procedure) should contain only the M/L program as any other pascal code within the function (or procedure) may run strange if at all.

```

FUNCTION SWAP(i:integer):integer;
begin
    inline ($BD/$00/$06/ ($ LDA
600,X $)
                $AB/      ($ TAY $)
                $BD/$01/$06/ ($ LDA
601,X $)
                $9D/$00/$06/ ($ STA
600,X $)
                $98/      ($ TAY $)
                $9D/$01/$06/ ($ STA
601,X $)
                $60);      ($ RTS $)
END;

```

The above function contains the code and the format to do the swap function. As you can see it is quite simple in structure. With one variable (i) being passed to the subroutine, and one being returned. Your subroutine may pass as many variables as you want. Note that pascal uses page 6 as the stack.

Now only one procedure is left to do and that will initialize the M/L subroutine, because as it now exists it will not run. This procedure, which I will call "FILL", will wipe out the five bytes that precede the M/L program and cause the pascal interpreter to execute the code instead of skipping over it.

```

PROCEDURE FILL;
begin
    fillchar(addr(swap),5,chr($EA))
; ($ NOOP $)
end;

```

This fill procedure as written will locate the start of the function 'SWAP' then it will write five bytes of "\$EA" (NOOP) starting at this address. Now all you do is somewhere in your initialization code or in the mainline program is call the 'FILL' procedure to initialize your M/L program, it then will be ready for use.

So now you can implement M/L programs to move players, rewrite display lists or whatever you would like to use them for. This structure also allows you to create new functions or procedures to add to the ATARI Pascal or to handle any special problems you may encounter. Now some notes of caution:

1. All parameters are passed back and forth on the stack located at \$600 (page 6!) so you must stay away from page six.

2. Because you cannot control where in memory the code will be located it must be fully relocateable.

3. Always end your code with a \$60 (RTS) to return you to the pascal.

4. Always initialize the code before trying to use it or it will not run.

In my next article I will discuss the newly found function 'XIO' and how to use it to give you more I/O power with the ATARI Pascal.

LOW BUDGET ATARI
TELECOMMUNICATIONS OR
THE ATARI 1030 MODEM ISN'T SO BAD
AFTER ALL
BY JOE DANKO

This is being written for all of us who jumped at the chance to get 'online' with a modem. With visions of uploading and downloading we eagerly snapped up the '1030' modem for a relative mere pittance. No inscrutable '850' interface or exotic modem with more computing power than a '400'. Just a little flat box with two lights and one switch. Getting it connected to the system was not bad. Then we turned it on and dialed the first number and got \$0\$N\$L\$I\$N\$E\$. We discovered a very nice program in there. Easy to understand options and a nice method of scrolling back and forth through previous data. But, alas, no way to save any of that data and NO WAY to up or down load either. But wait! all was not lost. We dug out our long forgotten copy of 'AMODEM' from an ancient TAPE-OF-THE MONTH. We load up and 'RUN' and !!!! OH NO!!!! How can we turn on our '850' when we don't have or even want one?

The '1030' comes with a terminal program built in. To save the cost of a separate cartridge, I suppose, ATARI put the code inside the modem itself. When you turn on your computer with the '1030' on and the disc drive off the '1030' acts like it is a disc drive for a while and loads the program into your computer. It appears to me that this was done to allow a usable terminal program with a 16K memory. No room for DOS.

TO get DOS on our computer we have to use a different program than is in the '1030'. Fortunately for us there now exist at least four public domain programs that will serve our purpose very nicely:

1.AMODEM42.835 - This must be used with RHANDLER.835 renamed as AUTORUN.SYS. Use BASIC.

This is also used with a program called RDIAL that allows storage and retrieval of phone numbers and sign-on data.

2.RMODEM.BAS - This must be used with R.BIN renamed as AUTORUN.SYS. Use BASIC. This is

actually AMODEMXL. This is the one with the onscreen clocks. It may be used with a program called MINIMENU which I have not found yet. Phone numbers and passwords may be stored and retrieved also. 3.DISKLINK - Self-contained and all machine language. This one can't do downloading from the TAIG BULLITEN BOARD for some reason.

4.TSCOPE - The BEST way to use COMPUSERVE. All machine language and usable only for COMPUSERVE.

Of course, the ultimate for the '1030', so far, is HOMETERM which is part of HOMEPAK for you high rollers that can afford \$50. ('850' also). I have been informed by Dick Johnson of TAIG and TAIG BBS SYSOP that all of the public domain terminal software will be offered for sale by SPACE and TAIG. There will be two disks offered, one for '1030/835' users and one for '850' folks. Subsequent updates and new releases will be made available for downloading from the TAIG BBS.

ANALOG DISK #27

If you purchased ANALOG disk number 27 (Feb) you may have noticed that some of the programs were missing (No side 2). Please bring your old disk to the next meeting for an exchange of a corrected diskette

SWAP MEET

The swap meet will be repeated this month due to the lack of response caused by the snow storm last month.

NOMINATIONS

Nominations will be taken this month for all offices and elections will be held in May

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